B R E V I O R A

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A NEW SUBSPECIES OF *VARANUS EXANTHEMATICUS* (SAURIA, VARANIDAE)

By R. F. Laurent

Dr. Williams asked me recently to study a small series of young Savanna Monitors collected by C. J. P. Ionides in southeastern Tanganyika, where many novelties have already been discovered. He had been impressed by their striking color pattern which is quite different from the pattern exhibited by other juveniles of the same species.

In this, he was quite right. However, the morphological features selected by Mertens (1942) as characteristic of the recognized species and races of the genus *Varanus* did not suggest that the six critical juvenile specimens belonged to an undescribed form. In squamation they agreed perfectly well with *Varanus* (*Empagusia*) *exanthematicus microstictus* Boettger. Nevertheless, I believe that it is a serious mistake to ignore coloration when this character has the same degree of constancy as is generally considered significant for morphological characters. The difficulty here seems to be that the diagnostic juvenile patterns gradually fade during the life of the monitors so that the adults are far more similar, uniform and dull, than are the juveniles. As a result, the number of specimens available for comparison is greatly reduced, the adults not being distinguishable.

When I compared the Ionides specimens with other juveniles of *Varanus exanthematicus*, I came to the conclusion that the subspecies recognized by Mertens are themselves geographically variable as far as their juvenile color pattern is concerned.

The six juveniles from southeastern Tanganyika are alike, but obviously different from two specimens from Kenya; likewise, among the so-called southern *albigularis*, two juveniles from Zululand have a striped pattern quite different from the ocellated pattern of five other juveniles from Transvaal, Bechuanaland and Southwest Africa.

The photographs of specimens here discussed replace advantageously any clumsy and lengthy description. Feeling that six specimens disclosing the same color pattern are enough to infer that the population to which they belong has on the whole peculiarities patently different from those of other populations, I regard them as a new subspecies of *Varanus exanthematicus:*

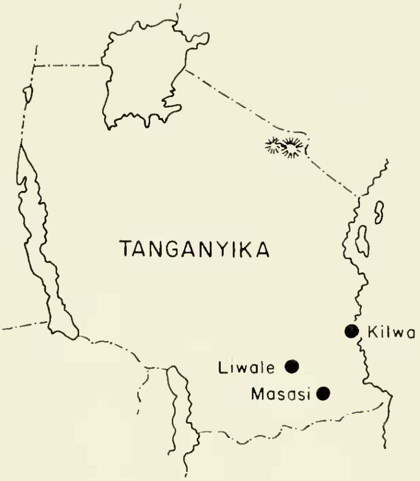

Fig. 1. Map showing the known localities for *Varanus exanthematicus ionidesi* n. subsp.

VARANUS EXANTHEMATICUS IONIDESI subsp. n.

Holotype: A half-grown individual (MCZ 54494), Kilwa, Tanganyika, 1956, coll. Ionides.

Paratypes: 1 adult, 2 subadults and 1 juvenile (MCZ 52536-39), Liwale, Tanganyika, 1953; 1 juv. (MCZ 54495), Masasi, Tanganyika, 1956; 1 juv. (MCZ 55470), Liwale, Tanganyika, 1957; 1 juv. (MCZ 56176), Kilwa, Tanganyika, 1958; 1 juv. (MCZ 56981), Liwale, Tanganyika, 1958. All collected by C. J. P. Ionides.

Diagnosis. A subspecies of *Varanus exanthematicus* similar to *microstictus* Boettger (type locality, Ethiopia) but differing from it by a very distinctive juvenile color pattern somewhat similar to that of *albigularis.*

The general color is lighter and with less contrast of light and dark colors than in two young *microstictus* from Kenya.

Two black lines start from the posterior border of the eye and approach each other on the neck, stopping abruptly in the scapular region where they form an acute angle. (The same lines exist in *microstictus* and *albigularis*, but they are hardly distinct in *microstictus*.) Between these lines there are three or four blackish marks (these are invisible in *microstictus*).

There are four or five transverse series of 6 light spots (8 to 13 in the typical form, or disposition irregular) generally surrounded by a black border, extending on 4 to 20 scales (in *microstictus* they fill 1 to 4 scales only and they have no black border); the mediodorsal spots are especially large and they fuse on the vertebral line (except in one individual where they are at least contiguous).

On the tail, the transverse bars are arranged in pairs which, in *ionidesi*, have the appearance of groups of four or even of eight, because the central zone of each bar may become as light as the intervals between the pairs and, in addition, two secondary zones of a less pronounced paling may still intervene on both sides of the central zone. These complications exist only for the first three or four pairs; the distal bands are plain black. These areas of paling of the central zones disappear gradually in *ionidesi*, but they are not at all apparent in the young *microstictus* available for comparison; in the latter, the terminal bars are not darker than the proximals. Lastly, the number of pairs is 9-10 in *microstictus*, but only 6-8 in *ionidesi*. The throat is blackish, as is usual, according to Mertens, for the other races.[1]

MORPHOLOGICAL CHARACTERS

As stated previously, the morphological characters are not different from *microstictus*. Table 1 gives scale counts as compared with Mertens' descriptions of *microstictus*, *albigularis* and *angolensis* plus some specimens of *microstictus* (Kenya) and of *albigularis* (southwest Africa and Transvaal) and *angolensis* (Lobito).

Certain measurements have been studied on scatter diagrams. No significant differences have been observed between *ionidesi* and *microstictus*, but it seems that *albigularis* and *angolensis* have the head broader and the snout longer than both *micro-*

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[1] This is not the case for the two *microstictus* juveniles from Kenya.

TABLE I

Subspecies	N	Scales around the body	Ventral scales (from gular fold to the groin)	Scales between the commissures of the mouth
ionidesi	5	129-150	88-99	53-63
microstictus (Mertens)	14	122-152	88-94	51-56
microstictus (Kenya)	2	131-134	87-90	50-52
albigularis (Mertens)	19	137-167	85-110	57-64
albigularis (Zululand)	2	139-147	98-99	54-57
albigularis (Transvaal, SW Africa)	5	137-149	88-107	53-60
angolensis (Mertens)	3	110-138	77-92	53-55
angolensis (Lobito, Angola)	4	126-141	94-98(!)	55-56

These data on *angolensis* suggest that this alleged subspecies might be clinally merged with *albigularis*.

stictus and *ionidesi;* the differences are minor and would have to be checked on large series. More interesting perhaps is the fact that the two Zululand specimens, different from all others by their transversely banded pattern, are also different in that their tail is shorter than the snout-vent length. This strongly suggests that another neglected race exists in South Africa, but it would be imprudent to describe this on two specimens with relatively inexact locality. The existence of this race will have to be confirmed by studies on larger samples of *Varanus exanthematicus* from South Africa.

Specimens utilized for comparison with *Varanus exanthematicus ionidesi*

Varanus exanthematicus microstictus Boettger, MCZ 41112, Sokoki Forest, Kenya (coll. H. J. A. Turner); MCZ 59154, Kakoneni on Sabaki River, Kenya (coll. M. J. Coe).

Varanus exanthematicus albigularis (Daudin), MCZ 45417-18, Zululand; MCZ 39906, Waterberg, Southwest Africa (coll. W. Hoesch); MCZ 41888, Saltpan, Pretoria Distr., Transvaal (coll. A. Roberts); AMNH 57600, Otjuiarongo, Waterberg, Southwest Africa; CNHM 17141, Gaberones, Bechuanaland (coll. H. Lang); CNHM 75712, Hüttenhain, Southwest Africa (coll. W. Hoesch).

Varanus exanthematicus angolensis Schmidt, AMNH 47721–24, Lobito, Angola.

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REFERENCE

Mertens, R.

1942. Die familie der Varane (Varanidae). Dritter Teil: Taxonomie. Abh. Senckenb. Naturf. Ges., **466:** 235-391.

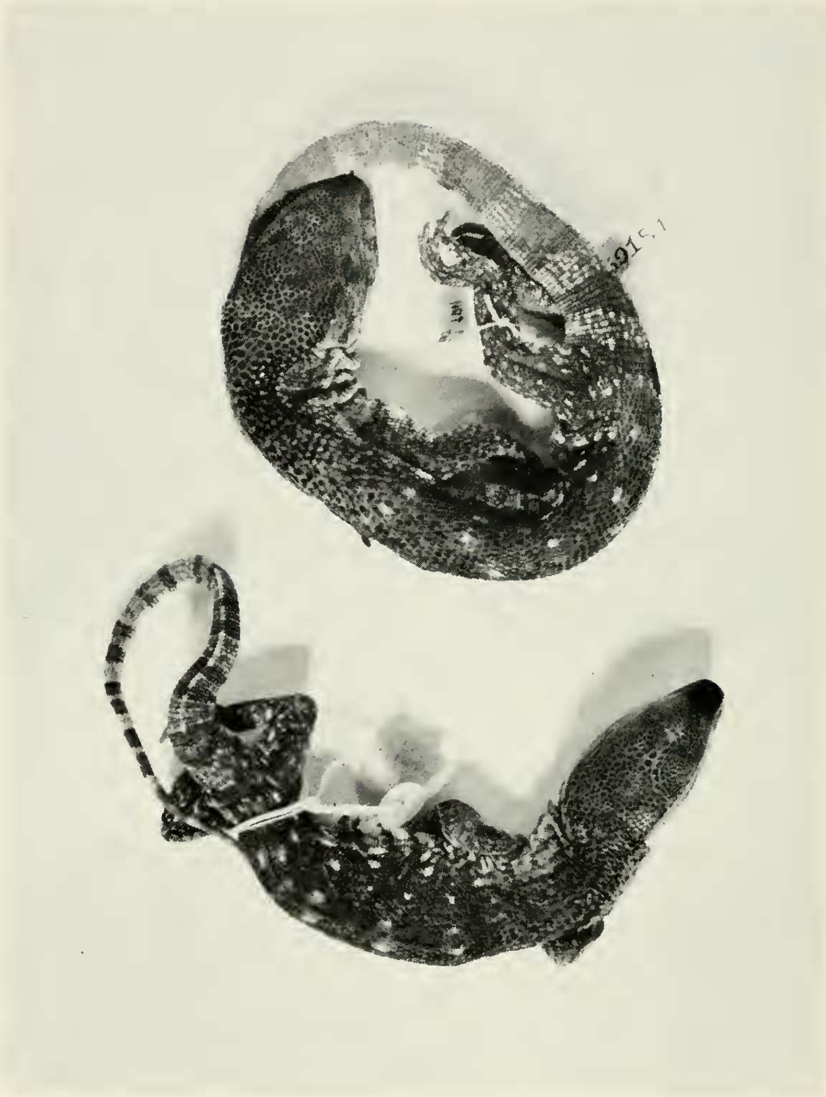

Fig. 2. *Varanus exanthematicus microstictus* juveniles from Kenya.

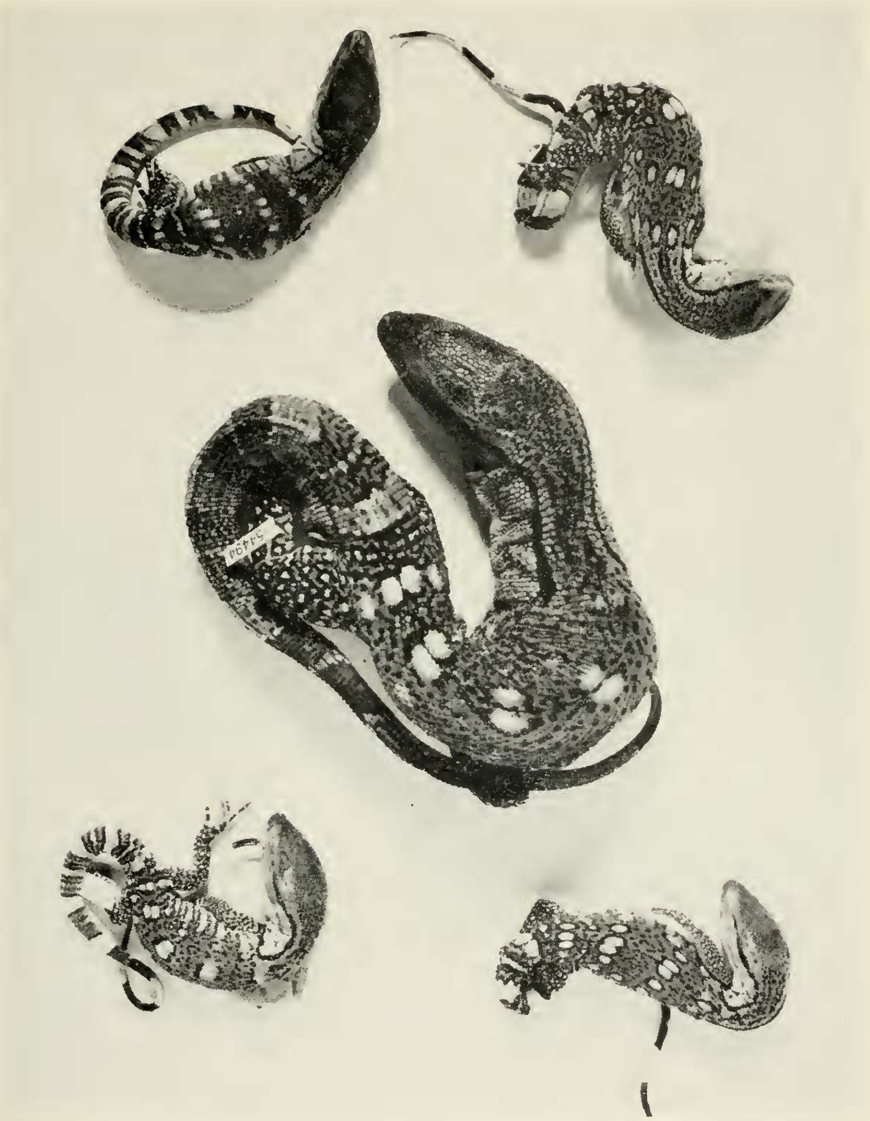

Fig. 3. *Varanus exanthematicus ionidesi* n. subsp. Holotype surrounded by paratypes.

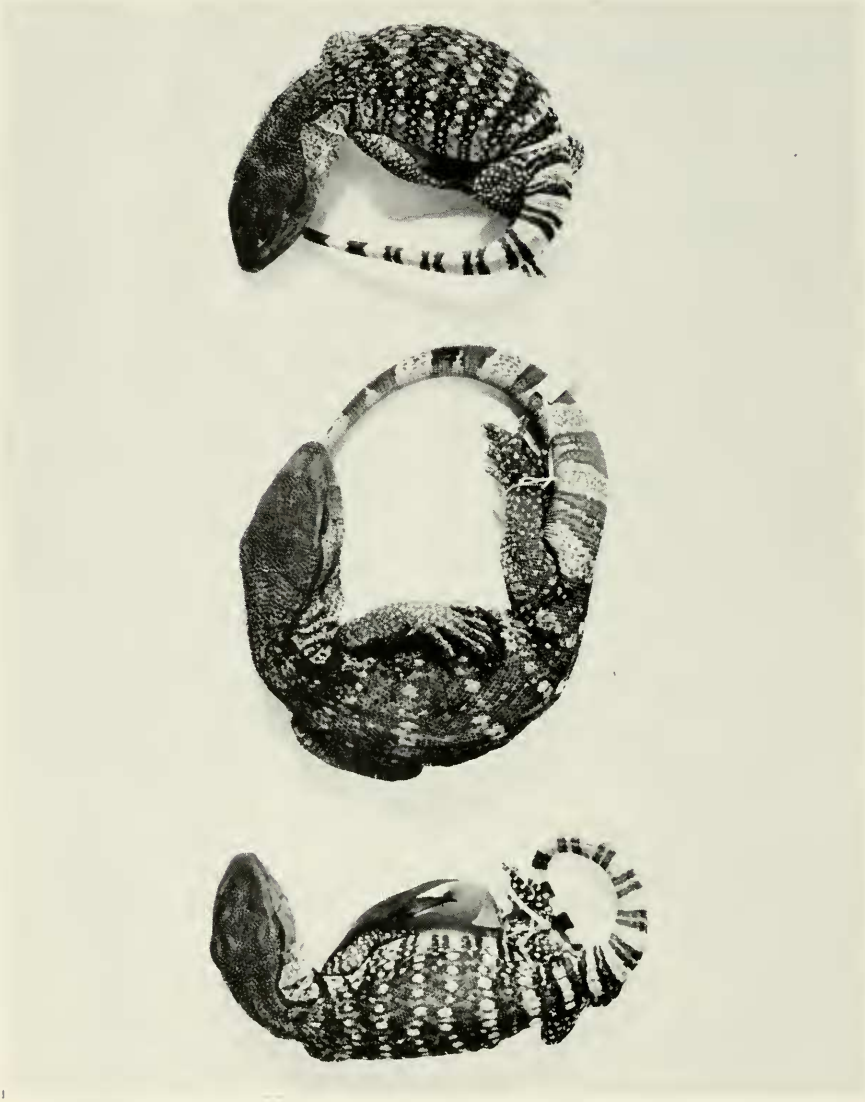

Fig. 4. *Varanus exanthematicus albigularis* juveniles, showing the typical pattern.

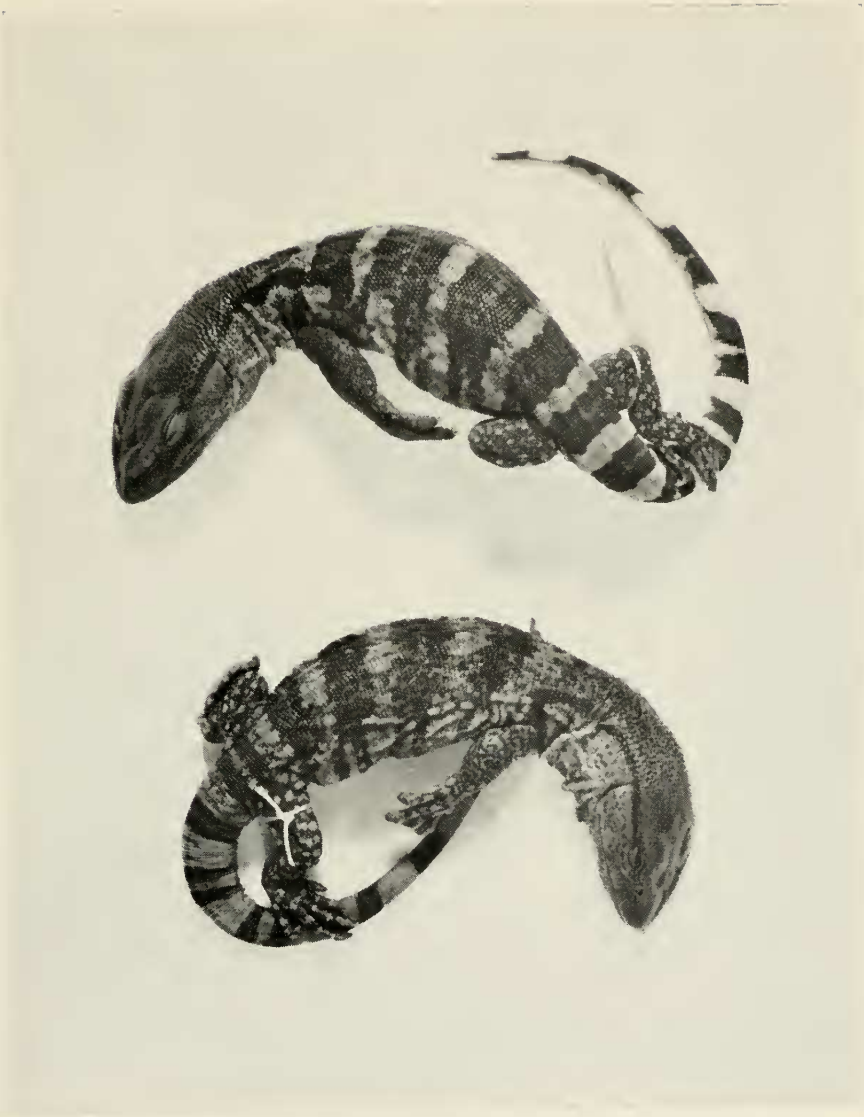

Fig. 5. *Varanus exanthematicus albigularis* juveniles from Zululand, showing the banded pattern.